



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,789	01/31/2006	Jean Armiroli	DKT03188 (0309-4063,901)	7731
67424	7590	05/19/2009	EXAMINER	
REISING, ETHINGTON, BARNES, KISSELLE, P.C. P. O. BOX 4390 TROY, MI 48099-4390			SCHNEIDER, CRAIG M	
ART UNIT	PAPER NUMBER			
	3753			
MAIL DATE	DELIVERY MODE			
05/19/2009	PAPER			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,789	<b>Applicant(s)</b> ARMIROLI ET AL.
	<b>Examiner</b> CRAIG M. SCHNEIDER	<b>Art Unit</b> 3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 18 March 2009 and 07 April 2009.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 15-24 and 28-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 51,52 and 56 is/are allowed.
- 6) Claim(s) 1-21,23 and 28-50 is/are rejected.
- 7) Claim(s) 22 and 24 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04/07/09 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

### **DETAILED ACTION**

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/18/09 has been entered.

#### ***Claim Objections***

2. Claim 54 is objected to because of the following informalities: The claim is dependent off of a cancelled claim. For the purposes of examination the claim will be treated as depending from claim 53. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support the language "about 0 amps", which implies that there is a current. The originally filed specification contains support for 0 amps.

***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 15-21, 23, 28-34, 46-50, and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Krüger et al. (WO98/45594).

Krüger et al. disclose a delivery system for a fluid which may be used to attain a desired pressure and discharge rate of the fluid, the system comprising a control valve (10) having a valve body having an inner bore (70) generally defined by a bore axis, a valve inlet (35), and a valve outlet (36); a spool member (53) at least partially interposed within the inner bore and moveable therein generally along the bore axis; a biasing member (17 and 60) having an end (the section of 17 abutting 58) associated with the spool member for biasing the spool member within the inner bore; a force exerting portion (72) for axially moving the spool member within the inner bore; and a flap device (51 and 50) associated with another end of the biasing member (end of 16 abutting 78) opposite the spool member and axially space apart from the spool member, the flap device including a flap inlet (38) defined by an inlet flap outer conduit and an inlet flap inner conduit, wherein the biasing member, in a first valve configuration as depicted in Figure 5, permits the flap device to open when pressure within the inlet flap outer conduit reaches a first pressure, and the biasing member, in a second valve configuration (which would correspond to moving the valve downwards in Figure 5), prevents the flap device from opening when pressure within the inlet flap outer conduit reaches a second pressure, wherein the spool member, in a third valve configuration, directs the flow of a

fluid from the valve inlet to the valve outlet when a biasing force imposed by the biasing member is sufficient to prevent the flap device from opening after pressure within the inlet flap outer conduit has reached an operating pressure; and a fluid pump (1) having a pump inlet (23) and a pump outlet (26), wherein the pump inlet is in fluid communication with the valve outlet (see translation dated (page 4, line 13 to page 15, line 26).

Regarding claim 16, wherein the flap inlet is generally defined by a flap axis, and the flap axis is generally co-axial with the bore axis as can be seen in Figure 5.

Regarding claims 17, 31, and 32; wherein the force exerting portion includes an electromagnet (72).

Regarding claim 18, wherein the electromagnet current is about 0 amps when the valve is in the first valve configuration (the unenergized state as seen in Figure 5).

Regarding claim 19, wherein the electromagnet current is between about 0 amps and a threshold value when the valve is in the second valve configuration (this occurs when the magnet is moved from the rest position).

Regarding claims 20 and 21, the functional limitations are capable of being performed by Krüger et al.

Regarding claim 23, wherein the flap device includes a seat (49) surrounding a flap orifice that defines a boundary between the inlet flap outer conduit and the inlet flap inner conduit, and a ball (50) that selectively contacts the seat to prevent the movement of fluids through the seat.

Regarding claim 29, the system further comprising a pressure sensor (9) for detecting the pressure of the fluid within a portion of the delivery system downstream of the pump.

Regarding claim 30, the system further comprising a control unit (6), wherein the control unit supplies power to the force exerting portion in response to a preselected pressure detected by the pressure sensor.

Regarding claim 33, wherein the pump outlet is in direct fluid communication with the inlet flap inner conduit such that the flap device may regulate the pressure output of the pump within a portion of the delivery system as can be seen in Figure 1.

Regarding claims 34 and 47-50, the apparatus of Krüger et al. is capable of performing the functional limitations as claimed.

Regarding claim 55, wherein the spool member has a peripheral recess (54) communicated between the valve inlet and the valve outlet when the spool member is in the third valve configuration, and a portion of fluid leaks from the valve inlet to the valve outlet when the peripheral recess is spaced apart from the valve inlet or the valve outlet. The valve has numerous positions during its travel from one point to another point. Right before the recess is completely past the outlet the fluid would leak from the inlet to the outlet.

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krüger et al. in view of Kelly (2004/0123841).

Krüger et al. disclose all the features of the claimed invention except that the first pressure in the system would be about 20-30 bar and that the second pressure would be the operating/idle pressure which is about 70 bar. Kelly discloses that the first pressure in the system would be about 20-30 bar and that the second pressure would be the operating/idle pressure which is about 100 bar (paragraph 2).

It would have been obvious to one of ordinary skill in the art to have the system of Krüger et al. function at the first and operating/idle pressures as disclosed by Kelly, since the first and operating/idle pressure as disclosed by Kelly are standard to a rail system.

8. Claims 43-45, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krüger et al. in view of Good et al. (3,193,250).

Krüger et al. disclose all the features of the claimed invention except that the flap device is axially adjustable relative to the inner bore such that a biasing force exerted by the biasing member on a portion of the flap device may be adjusted. Good et al. disclose a axially adjustable closure member (16) such that the closing force exerted by the biasing member may be adjusted (col. 2, lines 45-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the adjustable valve seat of Good et al. onto the flap device of Krüger et al., in order to improve the lifetime seating characteristics (col. 1, lines 9-12).

Regarding claims 26 and 43-45, the claims are clearly obvious in view of the combination of Krüger et al. and Good et al.

***Allowable Subject Matter***

9. Claims 51, 52, and 56 are allowed.
10. Claims 22 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

11. Applicant's arguments filed 4/7/09 have been fully considered but they are not persuasive.
12. The applicant is arguing that Krüger et al. fails to discloses that "the spool member, in a third valve configuration, directs the flow of a fluid from the valve inlet to the valve outlet when a bias force imposed by the biasing member is sufficient to prevent the flap device from opening after pressure within the inlet flap outer conduit has reached an operating pressure". The examiner respectfully disagrees with the applicant and asserts that the valve disclosed by Krüger et al. is capable of performing the functional language. The electromagnet (72) can be operated to place the spool member in the third position which would increase the biasing of the flap device further closed and therefore under normal operating conditions the flap device would remain closed.

Art Unit: 3753

13. The applicant is further arguing that the examiner has failed to address structural and functional limitations of claim 17, 31, 32, 34 and 46-50. The limitations have been addressed in the rejection above.

14. The applicant is arguing that the newly added claim limitation of the biasing member having an end associated with the spool member and another end associated with the flap device is not disclosed by Krüger et al. The examiner directs the applicant to the above rejection that addresses the claim limitation.

15. The applicant further argues that the flap device and spool member of Krüger et al. are not axially spaced apart. The examiner disagrees with this and points out in Figure 5 that the flap device extends further in one direction from the spool member and vice versa in the other direction. Therefore the spool member and the flap device are axially spaced apart from one another.

16. The applicant also argues that in the first position, the Krüger et al. electromagnet valve is at 0 amps and that the flap device in the first position would already be open at 0 bar. The examiner agrees with the applicant's statement but points out that the flap device will also open at 20-30 bar and therefore would read on the claimed limitation.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CRAIG M. SCHNEIDER whose telephone number is (571)272-3607. The examiner can normally be reached on M-F 8:00 -4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. M. S./  
Examiner, Art Unit 3753  
May 11, 2009

/John Rivell/  
Primary Examiner, Art Unit 3753